

a.) Remarks

Claims 1-7 are rejected under 35 U.S.C. §103(a) as being obvious over JP 58-199185A in view of U.S. Patent No. 4,810,562, both to Okawa. In support of the rejection, the Examiner states JP '185<sup>1/</sup> teaches all the features of the pending claims except for a water repellant layer, which deficiency is said to be addressed by U.S. '562.<sup>2/</sup> In particular, the Examiner maintains this combination of prior art would function in the same manner as the pending claims.

This rejection is respectfully traversed. Prior to setting forth their detailed bases for traversal, however, Applicants would like to briefly discuss the salient features of the present invention and, *inter alia*, its patentable nature over the prior art.

One fundamental feature of the present invention relies in Applicants' novel combination of a porous metachromic layer with a water-repellant resin layer. In this regard, the rejection relies, in part, on the misunderstanding that "water resistant" (as in the prior art) and "water repellent" (as in the claims) are the same (see page 3, line 3 of the July 1, 2004 Office Action). Respectfully submitted, this understanding is incorrect as the terms are utilized by those of ordinary skill in this art, as explained below.

Water resistant, e.g., "resistant against water" is utilized to convey that even if water is applied repeatedly and/or in large volume to the subject sheet or device, the sheet or device is not harmed (that is, here, the porous layer is not peeled off or dislodged, and the support layer is not broken, etc.) readily. In contrast, water repellent, as specified

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<sup>1/</sup> To complete the record, Applicants have prepared an English-language translation of JP 58-199185A. Such document is provided in the accompanying Information Disclosure Statement.

<sup>2/</sup> The Examiner notes that claims 8 and 9 would be allowable if rewritten "to overcome the rejection(s) under 35 U.S.C. §112, second paragraph, set forth in this Office Action" [sic, there are none] and in independent form. In this regard, the Examiner's effort in expediting prosecution by examining separately the subject matter of Applicants' dependent claims is gratefully acknowledged.

for Applicants' opaque resin layer, conveys that opaque resin layer repels water, e.g., water is not absorbed. Therefore, the porous layer absorbs applied water only where no "water repellent" resin layer is provided, and water is not absorbed by the porous layer where the water repellent layer is provided.

These characteristics (durability v. repellency) differ fundamentally, and none of the references relate to water repellent resin layers.

Moreover, the present invention relies on the water repellent layer to control the transparent nature of the porous resin layer. This feature, which too has nothing to do with either of the Okawa references, is discussed below in more detail. That is to say, these structural features provide that the present invention also distinguishes the Examiner's combination of prior art functionally.

	Present Application	US 4,810,562	JP 58-199185A
support	a support	a transparent film	a transparent film
porous resin layer (water metachromatic layer)	<ul style="list-style-type: none"> <li>• a low-refractive index pigment</li> <li>• a binder resin</li> </ul>	<ul style="list-style-type: none"> <li>• a white pigment with a refractive index of not more than 1.7</li> <li>• a binder</li> </ul>	{ lower layer } a layer containing a white pigment with low refractive index and a black coloring matter  { upper layer } a layer containing a white pigment with low refractive index
water repellent resin layer	yes	none	none
possible images	<u>image A</u> a water-repellant layer on or within the porous resin layer (Claims 1-3)  <u>image B</u> a colored layer on the water-repellant layer (Claims 4, 5)	<u>image C</u> an image on a colored surface of the substrate intermediate to the transparent film and the substrate  <u>image D</u> a surface image provided on the water-absorbable coating layer	<u>image E</u> any printed matter

As seen, in the present invention comprising a porous resin layer and water repellent resin layer, when dry (without absorbed water), the whole surface area is opaque and latent image A is not visible. This is met by JP '185, but not US '562. However, the operation of the present invention when wet differs fundamentally from both Okawa references; when wet

- (i) a porous resin layer becomes transparent where no water repellent layer is disposed and the support becomes visible.
- (ii) a porous resin layer portion does not absorb water where the water repellent resin layer is disposed, and remains opaque, so that (iii)
- (iii) the latent image A becomes visible by contrast between the color of the support and the color of the water repellent resin layer.

Nothing like these features is disclosed in the prior art, whether taken alone or in combination. For instance, U.S. Patent No. 4,810,562 teaches that when wet

- i) both the porous resin layer and the surface image D become transparent, so the whole surface area becomes transparent, and
- ii) the upper layer becomes transparent, and image C (6b in Fig. 2) provided on the colored layer disposed under a transparent film becomes visible.

Similarly, JP 58-199185A teaches that when wet,

- i) the porous resin layer and accordingly the whole surface area become transparent, so that (ii)
- ii) image E provided under the sheet becomes visible through the transparent film.

As described above, the basic structure of the present invention, as recited in claims 1 to 3, includes a porous resin layer and a water repellent layer, wherein the latent image is made visible by applying water. These structural and operative differences structurally and functionally distinguish the present invention from the prior art.

Structurally, neither of US '562 nor JP '185 teaches or suggests a water repellent layer. In US '562 or JP '185, what is provided on the film is a porous layer or a colored porous layer, both of which become transparent by applied water. Moreover, the present invention and each reference cited share only that image becomes visible by applying water, but the coloring mechanism is not the same and is patentably distinctive over the references.

Additionally, Applicants' dependent claims recite subject matter that further distinguishes prior art. For instance, claims 4 and 5 provide a colored layer (image B) on the water-repellant layer. In these embodiments, when wet

- (i) as before, a porous resin layer becomes transparent where no water repellent layer is provided, so the support becomes visible.
- (ii) as before, a porous resin layer portion does not absorb water where the water repellent resin layer is provided and remains opaque, so that (iii)
- (iii) the latent image A and the colored layer (Image B) become visible.

In view of the above, Applicants submit that all of the Examiner's concerns are now overcome and the claims are now in allowable condition. Accordingly, reconsideration and allowance of this application is earnestly solicited.

Claims 1-9 remain presented for continued prosecution.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

  
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